MT-602 L

User manual

Auto Chip Mounter

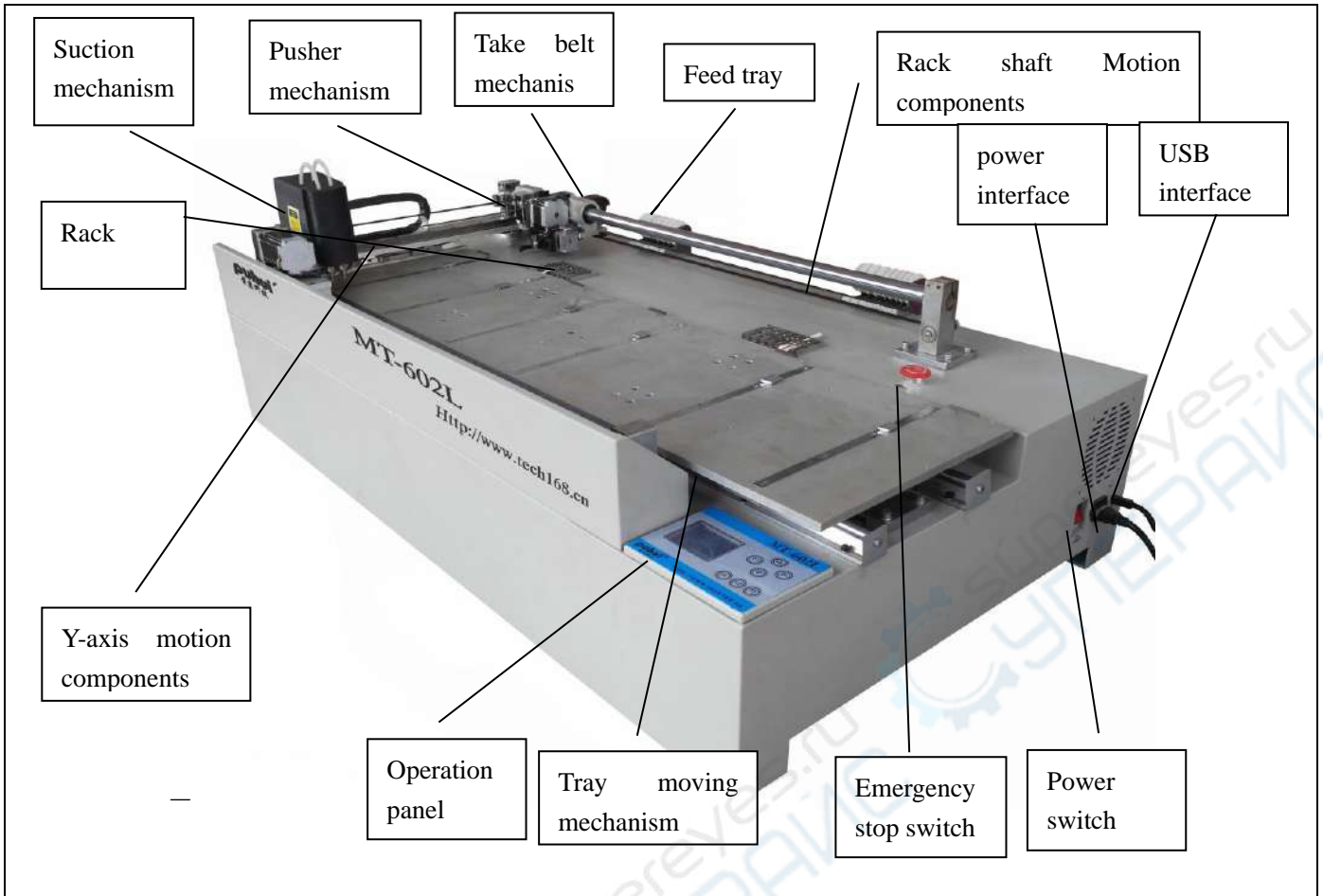Taian Puhui Electric Technology Co., Ltd

Http://www.tech168.cn

Instruction of installation and commissioning
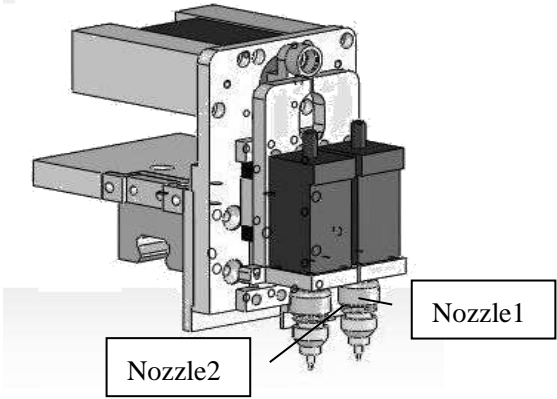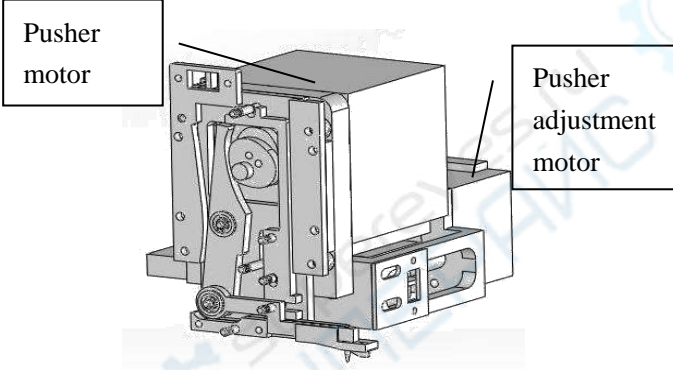
➢ Introduce of machine

一、 machine parameters
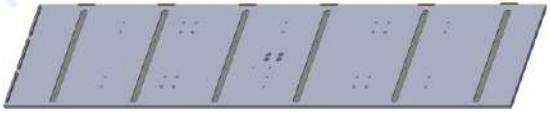
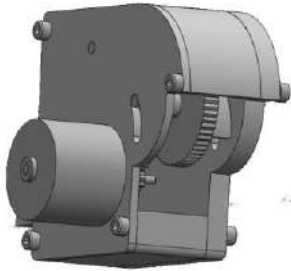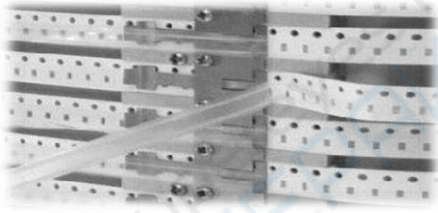| Item	specification
product name	auto-mounter machine
product type	MT-602L
mounting head	double mounting head
Theoretical speed	5000CPH
positioning accuracy	0. 025mm
net weight	162kg
applicable elements	0603-1206 SMD transistors, diodes, capacitors, resistors, chips, etc.
number of rack	16：8mm=8，12mm=8
Number of offline storage files	20
max size of circuit board	300mm×1240mm
power supply	220V，50/60Hz，280W
vacuum gas source	-60Kpa，8L/min
operating system	Windows
installation dimension W×D×H	1396*761*480
Number of vacuum pump	1
Number of pump	1
malfunction detection	Suction leak detection, pressure detection

二、 appearance of the machine and basic structure

puhui®

| Suction mechanism | Pusher mechanism | Take belt mechanis | Feed tray | Rack shaft Motion components |
| power interface | USB interface |

Rack

Y-axis motion components

| Operation panel | Tray moving mechanism | Emergency stop switch | Power switch |

三、 Main Institutions

		1, Y-axis plate
Y-axis motion components		2, linear bearings supporting base
		3, linear bearings LM25UU
		4, Y synchronous wheel mounts
		5, Y synchronous wheel
		6, Y-axis motor mount
		7, large X-axis belt fixed tooth plate
		8, shaft belt adjustment block
		9, large X-axis belt adjustment block briquetting
		F608ZZ flange bearings

Suction mechanism	Nozzle2 Nozzle1	1, the vacuum solenoid valve 2, linear slide MGN9C 3, Z-axis limit switch 4, pick-and-place the drive motor Z 5, the rotary drive motor Q1, Q2 6, a nozzle, the nozzle assembly 2 7, Z-axis suction mounting plate 8, Y-axis slide mechanism connecting plate suction 9, Y-axis belt tensioning block 10, Y-axis belt tooth plate 11, motor angle slider stopper
Pusher mechanism	Pusher motor Pusher adjustment motor	1, the pusher motor 2, the pusher cam mechanism component 3, T limit switch 4, the pusher pin 5, the pusher adjustment motor 6, pusher holder 7, pusher slider
Tray moving mechanism		1,1240X300 tray 2, the slider tray 3, the tray belt fixing plate 4, linear slide SBR16UU 5, slider slider 6, the right tray stopper 7. Fixed slider block

Waste recovery mechanism		1, closing with gear box 2, the take-up gear assembly 3, take-up motor 4, the take-up motor drive circuit board
Feed tray		1, tray holder 2, pin for tray 3, waste recycling gear 4, the guide wheel
Rack		1、patch wedge 2、pressing reed 3、discharge pressure bar

➢ **Preparation and installation**

1. Preparation and Precaution of installing
   （1）Preparation of installing
   1. Choose a flat ground to ensure that the machine level
   2. Choose firm placement platform to ensure that the machine can not move.
   3. Enough space for production operations.
   4. Avoid hot and humid environment.
   5. Check the power cable if there is breakage.
   （2）Precaution for use
   1. Electrical Considerations

      Use a multimeter to check if the power supply voltage is correct and the connection is reliable.

      Ensure that it is earth grounded safely.

      Ensure that all hardware connections are secure.
   2. Safety Precautions

      Before moving the machine, turn the power off, unplug the power cord.

      Pay attention to personal safety when transport.

      Ensure there is no foreign matter inside of machine before electrifying.

Before electrifying, manual confirmation of the agencies operating normally, without hindrance.

Press the red emergency stop switch, and the system power supply is disconnected when there is emergency.

Installation of mounter

（1）Select the appropriate operating space for placing Mounter

（2）The SMT machine should be placed in a special support frame.

（3）The machine power should be accessed on the labeled INPUT socket.

➢ **Debugging Preparation**

1. Safety tips of commissioning test

   （1）All of components that are working should not be obstructed when operated.

   （2）All of components that are working should not be pushed when stopped.

   （3）Ensure that the terminal connection is well.

   （4）Restart it after 20 seconds when cut off power.

   （5）Press the red emergency stop switch and the system power supply is disconnected if there is emergency.

2. Introduce of operation panel

   （1）Above panel
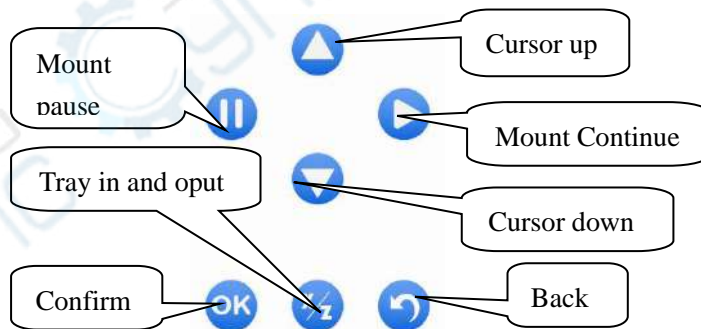
   1. Emergency stop switch

      Press this switch, power is cut off and all actions of mountor machine are stopped.   Clockwise rotation, button bounces and power is on, following that machine resets and each axis return to the original position.

   （2）Main panel

   1. LCD
   2. Buttons

Description of function keys:

When the reference point to identify the state, it is used as the arrow key of mounting head to control the moving of mounting head.   When the ref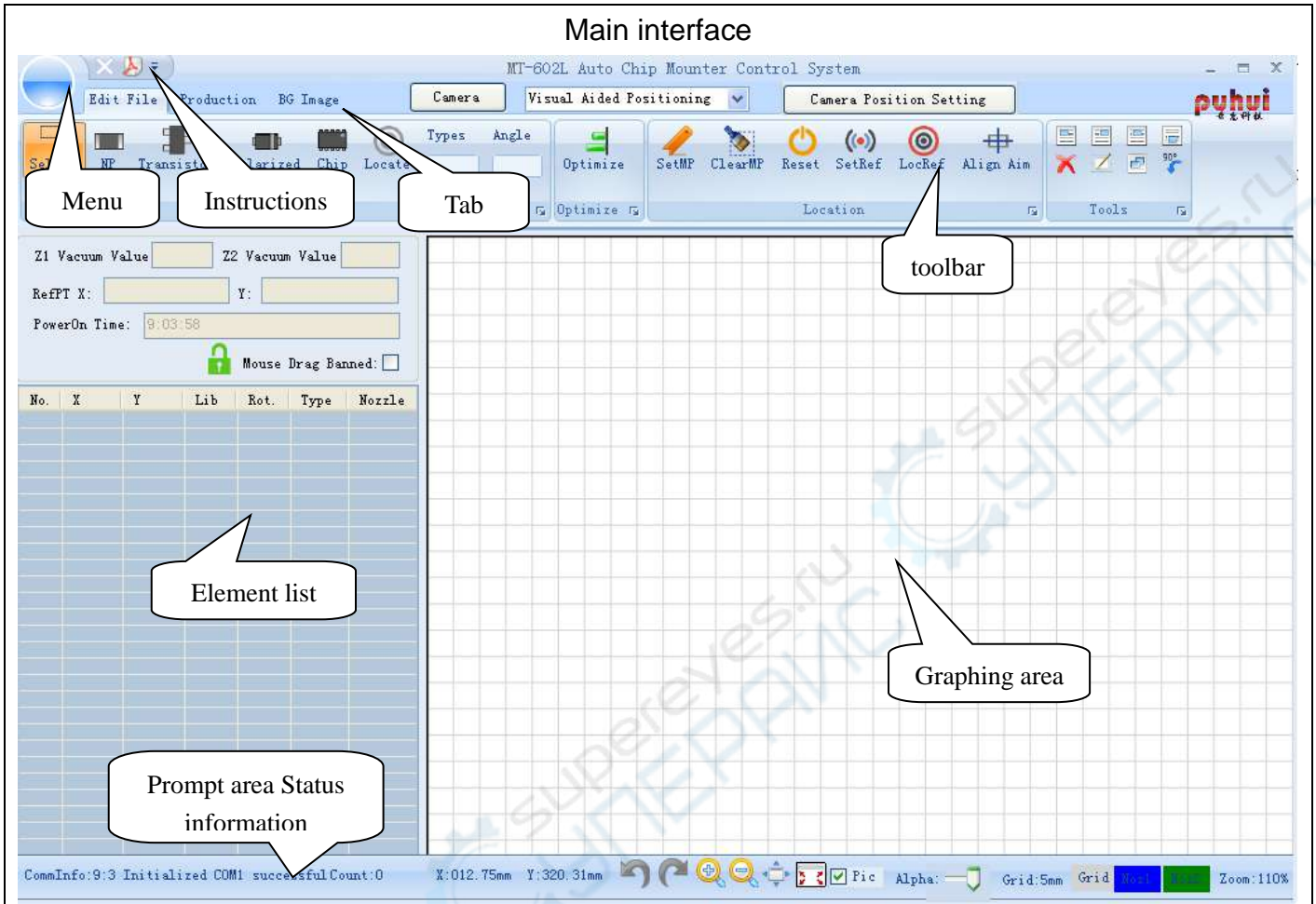erence point to identify the state, it is uesd for controlling the nozzle's up and down movement, while other states, functions as shown above picture.
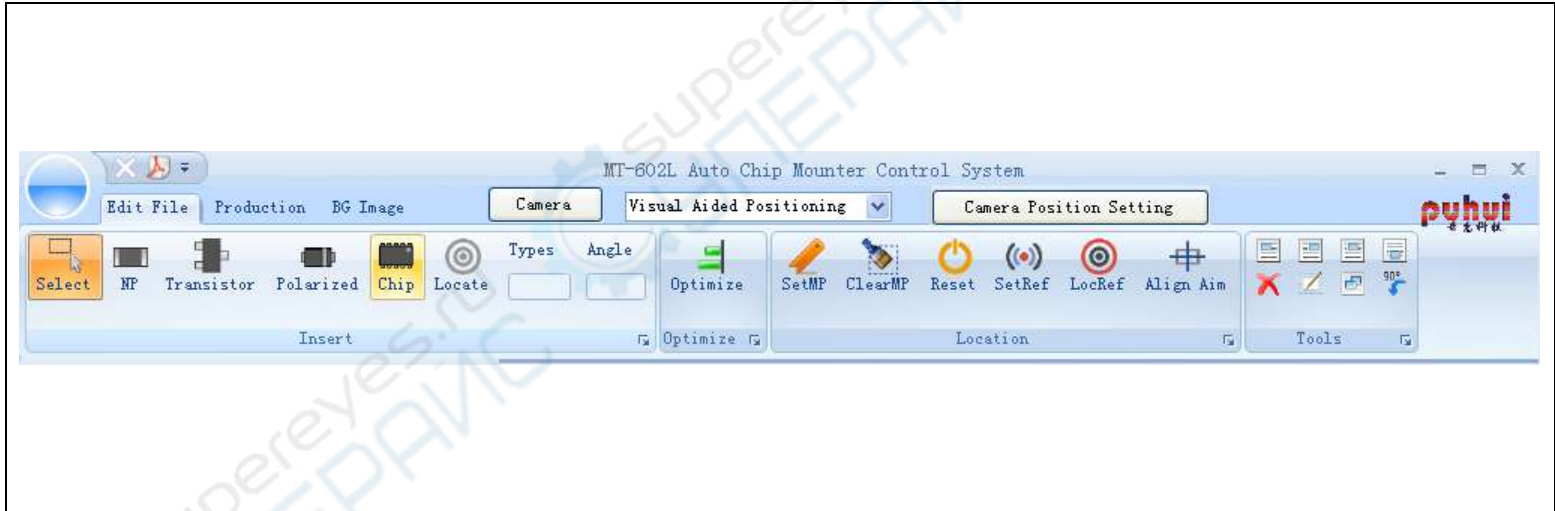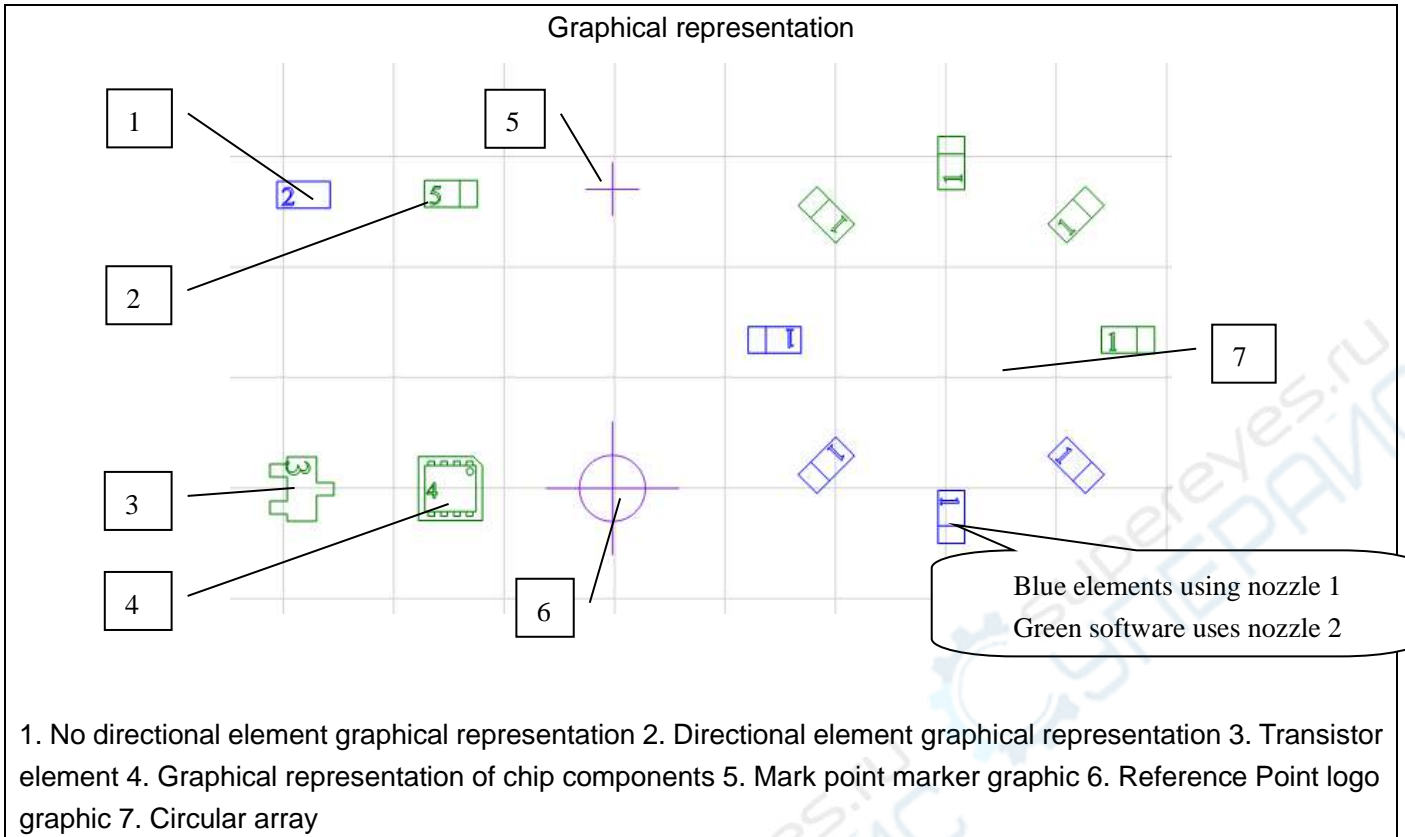
   （3）Side panels

   1. Cooling fan outlet
   2. Access outlet for main power

3. Power switch

4. USB communication interface

3. Introduce of software interface

Main interface

Menu

Instructions

Tab

toolbar

Element list

Graphing area

Prompt area Status information

Graphical representation

1. No directional element graphical representation 2. Directional element graphical representation 3. Transistor element 4. Graphical representation of chip components 5. Mark point marker graphic 6. Reference Point logo graphic 7. Circular array

Blue elements using nozzle 1
Green software uses nozzle 2

Parameter interface of equipment

Unit Manager

- Backup and recovery zone
- Each axis positioning zone
- Other parameters zone
- Pusher step zone
- Rack management zone
- Current nozzle settings area
- Pneumatic control zone
- Rack parameter field
- Rack coordinate adjustment zone

Interface of the device parameters

1. select all of rack 2. Empty rack model column 3. rack Number 4. device coordinates of rack   5. element models of rack 6stay time on elements when picking element.   7. take-up tension of take-up belt   8. Whether to check leak of rack element 9. The nozzle type that can be used on rack element.   10. device location coordinates the feeder element Picking Y   11. Discharge depth of the rack-mount device application when the nozzle 1, 12Discharge depth of the rack-mount device application when use nozzle 2, 13. Single rack selection box

Paraments interface of the device

System Settings

General Blocks Re...

Mounter online port selection

Communication

Port: COM1   Baud Rate: 38400   Reconnect

Communication baud rate setting: Do not change this

Region of Tray

X: 1300 mm   Y: 360 mm

Axes Factors

X: 0.999   Y: 0.997

Rack coordinate coefficient correction: This section generally do not need to change, but after replacing a timing belt or adjust belt tightness need to re-adjust

Cancel

Operation instructions

Operation 1 —— Connect with computer

一、Connect MT-602L with computer by using USB wire,open the control software, turn on the power of MT-602L.

二、Click "main menu" - "system parameter, you will see "system parameter setting dialog box", click serial port, you will see the current name of the serial port.

三、Select the serial port which match with USB wire.

四、Click OK, you will see the notice information in the bottom left corner of page。

五、At this time, Press "OK" at MT-602L operation panel, start to connect with computer, it connect successfully when MT-602L operation page show "already connected with computer"
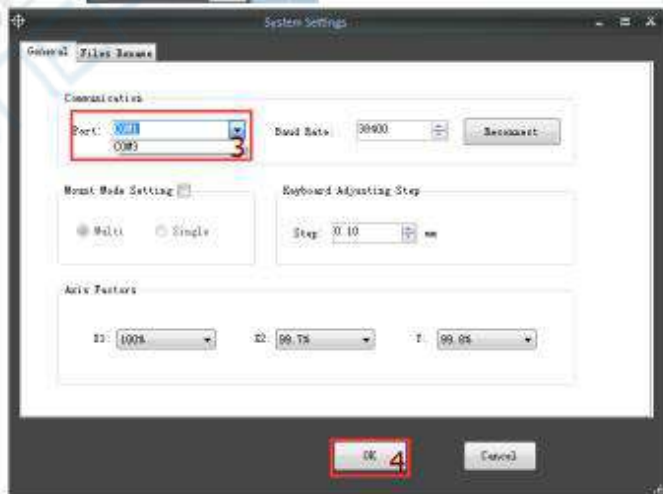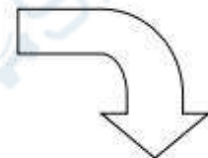
14:6 Initialized COM3 successfully

Operation 2 —— Parameter Adjustment

1.   Install Feeders
a. Feeders NO 1-4 suit for 8mm diode, triode with plastic feeders.   5-8 suit for
12mm components,Feeders NO 51-54 suit for 12mm components
55-58 suit for   8mm   diode, triode with plastic feeders

  b   In the long LED plate mount, the 1~8 rack automatic matching tray right side element, 51~58
rack, automatic tray left side components,So the same type of components must beSymmetrically
arranged on the material rack at the left and right side of the machine
2.   Entry formation of feeders
(1). Click Main menu - Unit manager, entry the information of feeders.

(2). Check feeders coordinate

Checking purpose: make nozzle locate in the middle of component between left and right.

Click "main menu" – "Unit manager", click the number of checked feeder, click [Locate], the

nuzzle will move to the feeder, click [Z-Pickup] and [Z-ReturnHome], check whether the nuzzle

locates in the middle of component. If not, click [<] and [>], then click [Send], click [Locate]

again, the nuzzle wiil move the new coordinate, check again to confirm the position. Click

[Send] after adjusted.
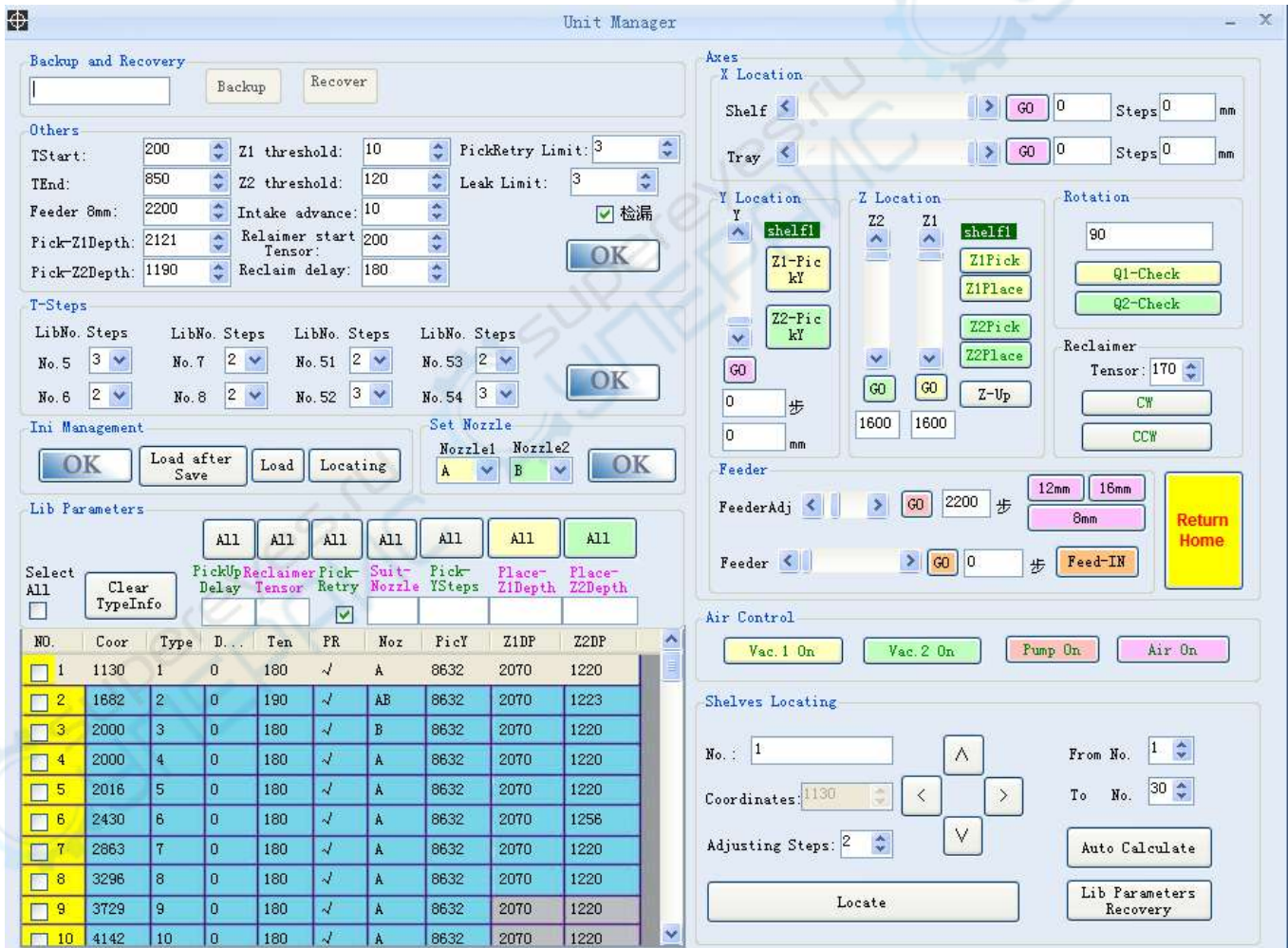
(3). Check pick- Y steps

Checking purpose：make nozzle locate in the middle of component between before and after.

Select any a feeder number, click ▢ Locate , then click ▢ Feed-in to push a component, coil the skin

manually.   Then copy the data of Y steps.

Click Go , the nuzzle will be moved over the component. Click Z-Pickup , the nuzzle lands

on the component, check whether the nuzzle locates in the middle of component.   Copy the

data to   entry the pick Y steps. , click Send to save data.

(4).   In pushing step length, according to the no.   31 ~ 36 loading of material situation, set up
pushing step, click set ▢ OK   after the completion of the pushing step to save data.
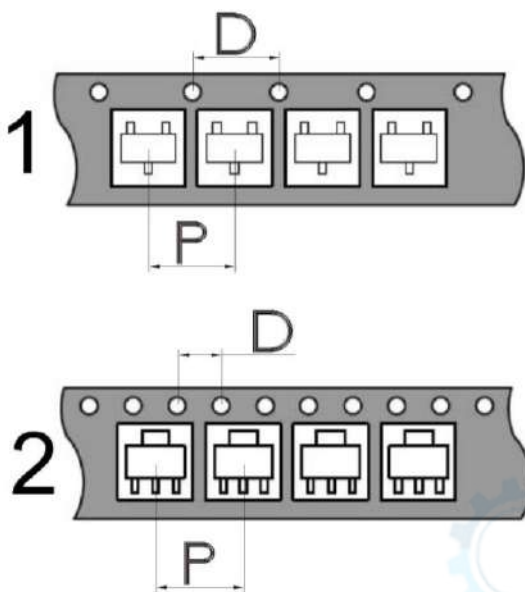
1：P=D 推料步长=1
2：P=D*2 推料步长=2

3.   Suction nozzle setting

(1) The machine is equipped with five different specifications of the suction nozzle, specifications
and codes are: A inner diameter is 0. 6 mm, B inner diameter is 0. 8 mm, C inner diameter is 1. 2
mm, D inner diameter is 1. 5 mm, E inner diameter is 2. 5 mm.   In order to realize the customer's
different specifications of the ideal of the patch SMT.

(2) Users choose to maximum meet all of the SMT components installed on the material shelf two
suction nozzle assembly requirements, installed on the suction nozzle 1, the suction nozzle 2.

(3) Click the main menu - equipment parameters - in the "current suction nozzle set" drop-down menu Settings, such as, code-named B of suction nozzle is installed on the suction nozzle 1, as shown below "suction nozzle 1" below the menu option "B", the same method for the suction nozzle 2 "Settings, set up is completed, click the current setting suction nozzle area OK save data.

(4) According to the material on the element size set the suction nozzle. Of no. 0603 components using A suction nozzle SMT, 0805 and 1206 components using A and B, suction nozzle specifications for SMT, large size chip components suggest using D, E, suction nozzle for SMT. All other components according to the size to choose suitable for placement of the suction nozzle specifications.

4. Parameter adjustment

(1) Coordinate correction and pick up material depth adjustment

▲ adjustment purpose: suction nozzle is located in the rack to head is the central element direction and depth has the right to pick up.
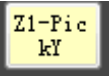
▲adjustment method:
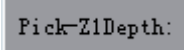
NO.	Coor	Type	D...	Ten	PR	Noz	PicY	Z1DP	Z2DP
1	1130	1	0	180	√	A	8632	2070	1220
2	1682	2	0	190	√	AB	8632	2070	1223
3	2000	3	0	180	√	B	8632	2070	1220
4	2000	4	0	180	√	A	8632	2070	1220
5	2016	5	0	180	√	A	8632	2070	1220
6	2430	6	0	180	√	A	8632	2070	1256
7	2863	7	0	180	√	A	8632	2070	1220
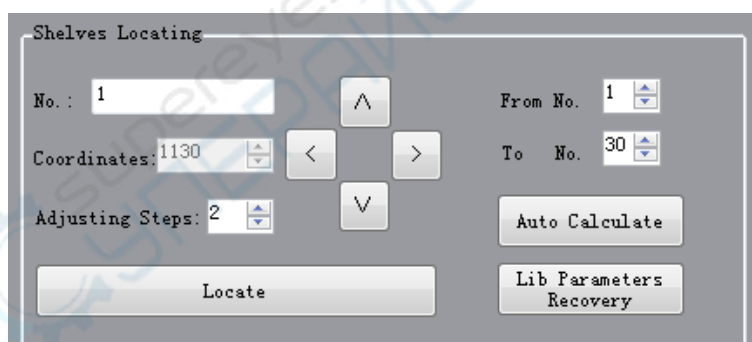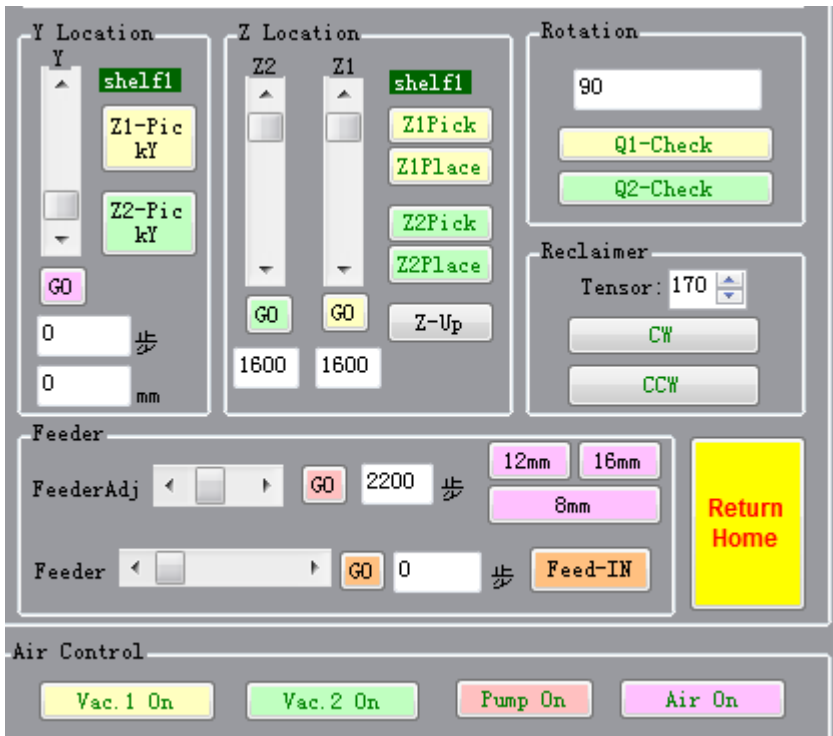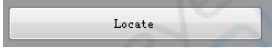
(1) In turn, click on the main menu - equipment parameters, the material parameter selection a

marking bar, click [Locate], suction nozzle 1 will be shifted to the rack, click Z1-Pic kY ,

near the suction nozzle to the material, click Z1Pick on the suction nozzle 1 to fall on the

components, observe whether suction nozzle 1 is located in the center position of the element left

and right.   If there is deviation, according to the migration direction and distance, click < or

> adjust (click < , rack position shift to the left, click > , rack position moves to the right).   Then

click [Locate] on the suction nozzle 1 will be moved to the new coordinates, repeating

observation adjustment, until the suction nozzle 1 is the central element is located in the left and
right.

(2) Click ^ or ∨ button, will change the selected material (position number increased to shift to

the left, position number reduced to moves to the right), click [Locate], suction nozzle to

the material.   Repeat the first step of the operation, until all rack position adjustment.

3, click OK on the material management, to save parameters are adjusted to the
MT - 602L   hosts.

4, watch suction nozzle in the above check Z1 falls on components, whether to have enough buffer.

If need to adjust, click Z Location on the main menu - equipment parameters, fine-tuning area Z1

slider and Z1 slider below GO , click to view at this time whether there is enough to the suction

nozzle on the element of the buffer, adjust the appropriate after copying the value in the text box

below the Z1 notification `Pick-Z1Depth:` to the text box at the back, the same method to adjust Z2 found material depth (note: Z2 to pick up the smaller depth, said the whereabouts of suction nozzle Z2 depth, the greater the Z1 pick up material depth, the greater the said Z1 falling depth is larger).

5, If parameter tuning out, press `Lib Parameters Recovery`, material parameters all returned to the factory settings.

(1) The adjustment of pushing mechanism

First in the material parameters of the bar, choose a 8 mm rack, then click `Locate`,
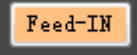
suction nozzle will be shifted to the rack, click `Z1Pick`

and `Z-Up`, when the element suction nozzle 1 is located in the center of the left and right

position, slide `FeederAdj ◄ ▸ GO 2200 步` the slider and click `GO`, pushing electric opportunity

to the slider move in the direction of the translation, click `< >` at the ends of the slider and then

click `GO` on pushing the motor position fine-tuning, when pushing motor to pushing needle at strip

pushing round hole left and right in the middle of the position, stop the adjustment, click `Feed-IN`
right now, to see whether the normal launch patch element, adjust the value

`FeederAdj ◄ ▸ GO 2200 步` in ideal will be copied into the text box `Feeder 8mm: 2200 ▲▼`,

click `OK` in the `Others` to save data.

(2) Check pick - Y steps
Checking purpose：make nozzle locate in the middle of component between before and after.

Select any a feeder number, click `Locate`, then click `Z1拾料 Y坐标` to push a component, coil the skin manually. Then copy the data of Y steps.

PicY	Z1DP	Z2DP
3632	2070	1220
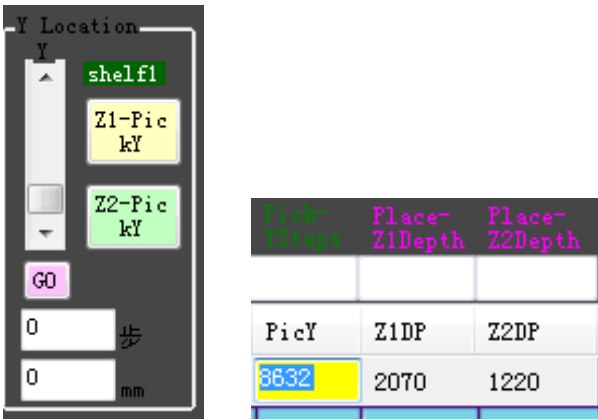
Click **Go** , the nuzzle will be moved over the component.　Click **Z-Pickup** , the nuzzle   lands on the component, check whether the nuzzle locates in the middle of component.　Copy the data to entry the pick Y steps. , click **Send** to save data.

(3) the feeding depth adjustment　Feeding depth of ± 10 will have obvious change
　adjustment purpose: due to the different thickness of components and circuit board thickness, adjust the that suction nozzle feeding with appropriate flexibility.
　adjustment method:
1, 11 ~ 30 rack and 37 ~ 56 material feeding depth adjustment Will be pasted on the circuit board fixed on the tray, Y axis adjustment slider, X axis, the slider, the suction nozzle above 1 to circuit board.　Adjust the Z1 slider, suction nozzle 1 after falling and circuit board, the distance between 1 after falling to suction nozzle, it is advisable to contact with the circuit board just.　Copy Z1 slider below the values in the text box, paste into the text box below **Place-Z1Depth**　and select material **Select All**　to full box full frame materials, click on the button **Place-Z1Depth** , the material of the Z1 feeding depth are set to the values in the text box.　To adjust the feeding Z2 depth in the same way.
In the no.　2, 1 ~ 10 aircraft and 31 ~ 36 material feeding depth adjustment
Rack and 31 1 ~ 10 ~ 36 rack for components have different thickness difference is bigger, so I need a single material.　Will be pasted on the circuit board fixed on the tray, will adjust the rack components placed on the circuit board, Y axis adjustment slider, X axis, the slider, the suction nozzle above 1 to components.　Adjust the Z1 slider, observe the suction nozzle 1 after falling and the distance between components, with suction nozzle 1 after falling, and element just slightly elastic contact is advisable.　Copy Z1 slider below the values in the text box, paste to the material parameters of the area to adjust the material feeding Z1 bar text box.　The same method to adjust the other rack and Z2 feeding depth.
3, the same method to adjust the feeding Z2 depth.　All after the adjustment, click on OK and save material in the material parameter bar parameters.
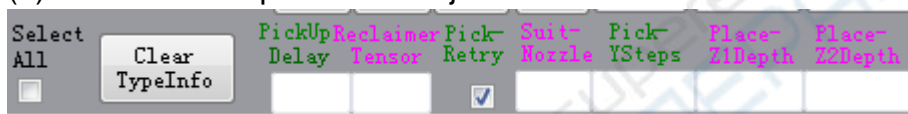
(4) Suction nozzle MARK point coordinate difference calculation:
　computation purposes:
Computing suction nozzle 2 relative to the suction nozzle 1 place in the X direction and Y direction deviation, so as to determine the suction nozzle device coordinates of 2.

calculation method:

1, have a small flag stop right at the tray.

2, open the placement machine control software, click edit graphics - click on the "1" suction nozzle, the mouse moved to the lower right graph area, the cursor into a black cross style.

3, move the mouse or press the direction key (keyboard to adjust the interval is inversely proportional to the magnification of the canvas, canvas magnification, the greater the keyboard adjustment interval is smaller, the adjustment precision is higher. Sliding the mouse wheel to zoom the canvas size), and makes the suction nozzle 1 corresponding move over the tray. Press the space bar, SMT machine suction nozzle 1 will fall, loosen the blank space key and suction nozzle 1 is raised.

4, use the mouse or the direction key to adjust the suction nozzle position, until the suction nozzle 1 center is for us to do MARK, press the Enter key, the cursor position MARK will appear blue cross point MARK. At this point, "suction nozzle 1" behind the two text box will show the MARK point coordinate values.

5, click on the "suction nozzle 2", the choice we make marked as benchmark, use the mouse or the direction key to adjust the suction nozzle position 2, until the suction nozzle 2 center right we do MARK in the block center, press the Enter key, the cursor position MARK will appear blue cross point MARK. At this point, "suction nozzle 2" behind the two text box will show the MARK point marker coordinates, press the ESC key to exit the MARK point positioning, suction nozzle 1 and suction nozzle 2 X and Y direction coordinate difference value is automatically calculated and displayed on the back of the two text box, click the "OK", transferred to the SMT machine.

(5) other material parameter adjustment:

Select All	Clear TypeInfo	PickUp Delay	Reclaimer Tensor	Pick Retry	Suit-Nozzle	Pick YSteps	Place-Z1Depth	Place-Z2Depth
☐				☑				

1, components are required when increasing material delay.

2, components of material coated hard to tear apart, tension, increase recovery of coated strip break easily, reduce the tension of recycling.

Enable/disable 3, leak detection function.

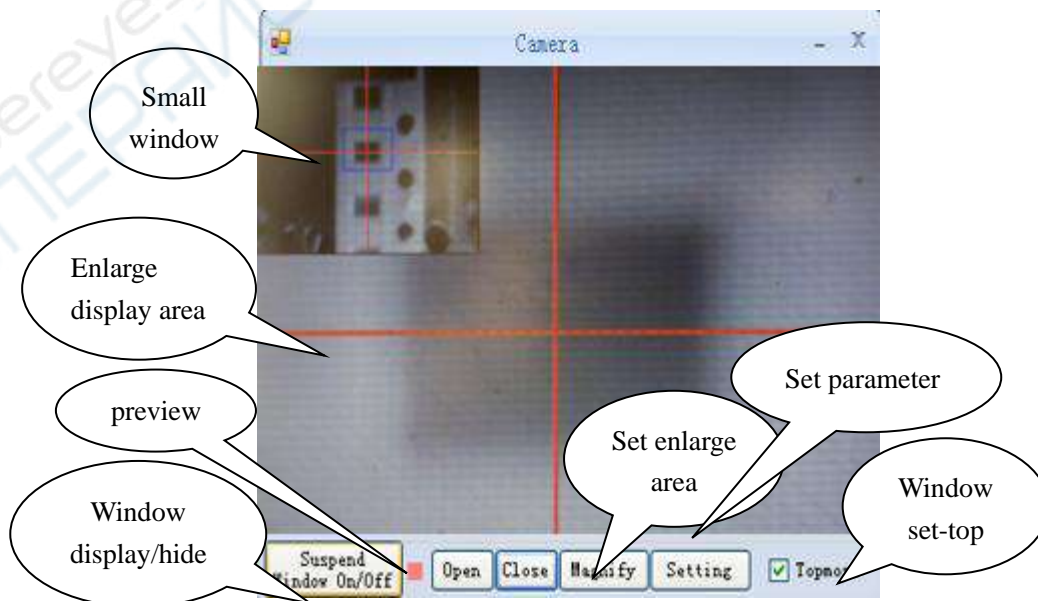4, adjust, click [OK] on the rack to save administrative zones

# MT-602L visual aids

Main interface
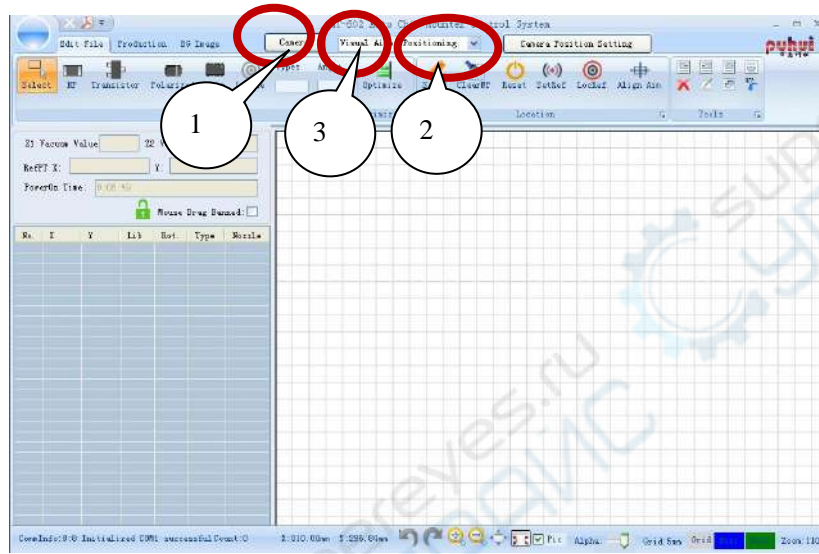
visual aids

1 Click   button 1 ,open visual aids
2 Use method of visual aids

（1）Click button 1 ,open camera。Visual aids will display image at small window and preview 。

（2）Click magnify，put mouse at small window ,choose a comment. it will display at enlarge area.

（3）The center of red cross is the center of camera。

（4）Using small window to make sure a general location ,make a accutate loctation at enlarge display.

3 (1) Poisition correction of Nozzle
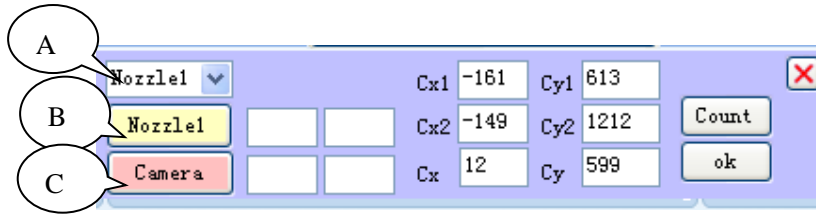
Cx1. Cy1：poisition between Nozzle1 and camera   Cx2. Cy2：poisition between Nozzle2 and camera
Cx. Cy：poisition between Nozzle1 and Nozzle2

Click 2 of main interface,open poisition correction of Nozzle. Click A change Nozzle1/Nollle2.   Click B/C ,set a Mark at

Same poisition,then will display a number at cx1 cy1 cx2 cy2 cx and cy. click Count,calculate the poistion between at Nozzle 1 and Nozzle 2 ,click OK.

(2) Make sure the poisition correction of Nozzle, click 3 in main interface ,choose Visual Aided Positioning to debug the correct position.
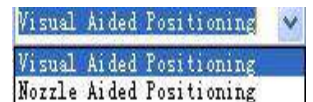
4 other description

We need reset the machine, afer changing the pattern the Nozzle or Camera to avoid wrong operation for SMT machine machine structure

Operation 3 — Create placement data document

(Create coordinate)

1. Basic Operation

  a. components edit
  1). Place component

  Click Chip1 Chip2 Chip3 to choose a component type, click on the left side of the mouse for placing component in the plot area.

  Tips: press the space bar to change the direction of rotation before placing; press F2 bar to change 90 degree of rotation. Click on the right side of mouse for quitting placing components state.
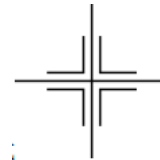
  2) Copy and paste

  Select the copy components, click Tools , select any component as the aim point, then move mouse to the paste point, click mouse to finish.

b. Set mark point

Purpose: find the corresponding coordinate, which corresponds to one point of PCB in the plate.
 Steps:
  1. Place PCB in the plate;

  2. Click SetMP , move mouse to the plot area, the mouse pointer changes :

  3. When move mouse or arrow keys, the nuzzle will be moved. Push the space bar, the nuzzle lands on the PCB. Loosen the space bar, the nuzzle rises.
  4. Select a component as aim component, move mouse to make nozzle land in the center of aim component. Press Enter bar, the mouse pointer changes blue.
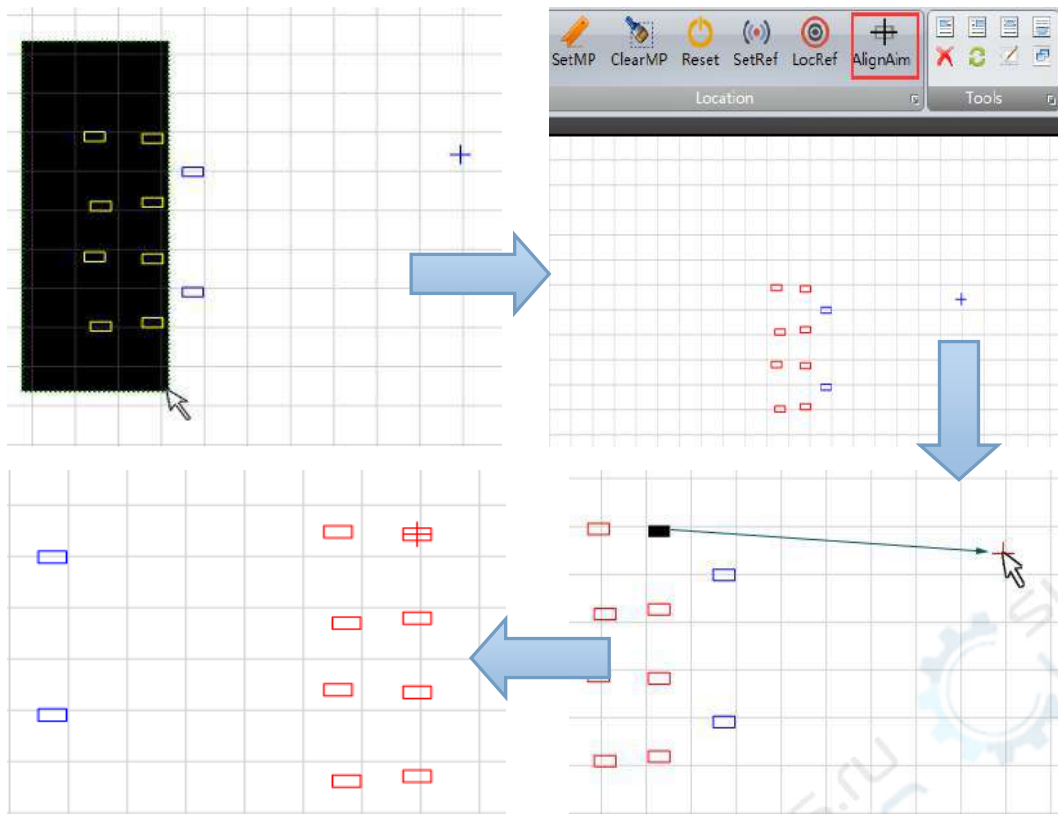 5. Press ESC bar to quit Mark state.

  c. Align aim
  1. Select all need to move components.

  2. Click AlignAim , click the aim component, it changes black.

  3. Click the blue mark point, all the need to move components will be moved to the new area.
  4. Press ESC to quit align aim state.

2. Create placement data document

There are 3 types to create placement data document.   Mark every point, import PCB coordinate document, Mark printer scan.

2. Create placement data document

MT - 602L can be used in the patch there are three kinds of coordinate data to establish a way: point positioning entry, PCB file to import, scan location input, circular.

   point positioning

1, the MARK point positioning by component, the corresponding MARK tag elements, until all components have the corresponding MARK points.   (note: use the same suction nozzle)

2, in all the MARK point location place component.

   PCB file imports

PCB file output and format conversion (see MT - 602L automatic placement machine PCB file output and format instructions.)

   scan location entry

1, ready to scanner, circuit board, and image processing software

2, circuit board to be included in the scanner, as far as possible with scanner edge parallel, 1:1 scanning, will obtain the image into the computer.   Using image processing software to upper and bottom level, image rotation and the image of PCB image beyond the edge of the cutting, save.

3, open the MT - 602L, click on the background image, click the insert pictures, find the image of the second step, open.

4, hold the left mouse button over the image and drag the image to the upper right corner of the plot area.

5, according to the position of each element in the image manually placed component, until all

components in place.

create element circular array

1, according to the situation of annular array to determine the reference element, element starting Angle, circular starting Angle, the radius of the circular array and circular array element number.

2, in the plot area placed a polar components, Angle set component, hold down the ALT key and double-click the component, on the "create element circular array" window, fill in the parameters, click ok to generate the element circular array.

Component starting Angle: reference element of lines and the Angle between the horizontal line.

Circular starting Angle: the benchmark of connections between components center and the circular array center of a circle with the Angle between the horizontal.

3. engineering data file is established

(a) makeup veneer patch data files.   With reference to the first three ways.

(2) the MARK all single boards reference element corresponding MARK points.

(3) after all the components selected veneer, copy and paste.   Repeated until the component number consistent with makeup.

(4) select each veneer block elements, and with all single boards MARK point benchmark counterpoint.

(5) repeat the step until all single boards MARK point center and the reference element.

(6)Click the main menu - save.   Data files to establish completed.

Operation 4— Set reference point

a. Mark point as the reference point of PCB in the plot area (via hole, pad holes, etc)

b. Click SetRef, mouse pointer changes ,click on the left side of mouse to set reference point.

c. Select the reference point, move to the mark point by align aim.

## Operation 5—Entry information of component

1 basic operations:

（1） Unit element editing

On the edit graphical interface---Graphing Area, double-click the *component* and *component parameter editing bar* appears, you can enter component parameters. Click the left mouse button on the space allows *component parameter editing bar* disappears

（2） Multi-element edit

Make a note of the corresponding rack number for each component and Select the same type of components(hold CTRL can select more),to input the model corresponding rack number in text-box Under Toolbar--Types for all, and click Types For All, this can modify component model in batch.

According to PCB, select the components having the same angle,to input target component' angle in Text-box under Angle For All of Toolbar , and click Angle For All, this way can modify components' angle in batch.
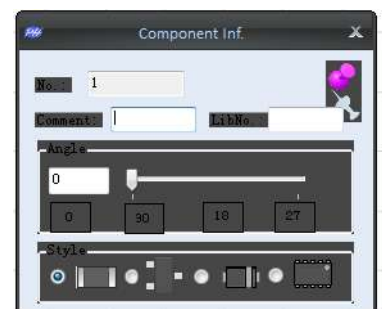
2 Improve patch data

（1） After finishing editing for all of patch, click optimize and system will finish the match for racks and optimizing for patch
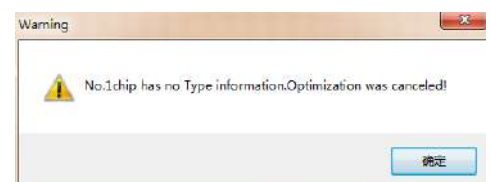
data.1~8 material frame is automatically matched to the right side of the tray component, the 51~58 number material holder automatically match the left side of the tray component. 10~50 will automatically match the tray rack in a limited area platelet components, if there is a 10~50 material frame element model beyond the small restricted area, is not complete.

Pop can not find the corresponding frame number prompt, please check the corresponding number of components, whether the input type, recorded in the main menu, type of equipment parameters - rack parameters exists, whether meet the above model set optimization rules.

（2）After finishing optimizing ,to click SAVE in Menu,this way can save patch data into computer.

（3）Click Menu-Transform, select Send to 0x in Dialog-Box(Mt-602L can save 20 kinds of patch data and can work without computer.　When transform, to avoid the document zine that had data, or original data will be gone.

➢ **Operating procedures6------operate the mount file and produce**

1 Run online

（1）Put the printed circuit board solder paste fixed on the tray holder according to the established direction

（2）Open MT-602L control software and MT-602L main power to run online operation

（3）When successfully online, click Production--Run--Run document 0X, the machine will work.

（4）When mounter finished and reset, the next circuit board can be done

（5）Leak detection and set the threshold adjustment

◆　Introduce of leak detection features

Mt602L could alarm and stop picking and placing of it can not suck the patch(component) according to the set threshold. (menu--nuit manager--others--Z1 threshold/Z2threshold)

◆　Check for leak detection alarm

If pop up leak detection hint, check the machine status and do the operations related to the following table

machine status	Corresponding operation
The current tray parts have not been exhausted	Exclude the following fault，press ▶ for continue 1、　The component' Pick coordinate is not modified. (corresponding rack coordinate and corresponding　rack' Pick Y) 2、　The component' pick-depth is not right 3、　The component' Relaimer Start Tensor is not right, cause cover film on component can not be teared and it obstructs the component to not be picked 4、　Nozzle type and component's size is not matched, the diameter of nozzle is bigger than component , which cause pressure leak. 5、　Z1/Z2 threshold is not right.　Modify and reset threshold
The current tray parts exhausted	Stop mounting, after replace new trays, to mount the next circuit or to mount for trapping.

◆ leak detection threshold settings

Z11:	0	Z12:		DZ1:	
Z21:	0	Z22:		DZ2:	

Vacuum Information

| Z1 threshold: | 10 |
| Z2 threshold: | 120 |
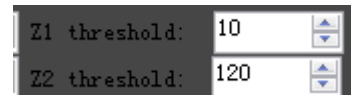
According to the condition of pick for component and Menu-Production--Information--DZ1/DZ2, to modify Unit Manager-Others--Z1/Z2 threshold.

Machine Status	Corresponding setting
selection of nozzle type is properly and drawing of element is right, machine prompts leak	The Z1 / Z2 leak detection threshold is increased to a value that is greater than the value of reported leakage of DZ1 / DZ2
Component can not be picked and machine can not alarm	The Z1 / Z2 leak detection threshold is increased to a value that is smaller than the value of DZ1 / DZ2 when mounting

◆ trapping method for circuit board that leaked mounting

1. way of selection

Selection with Mouse:In the Run window or click the marquee to choose the subsidy element needed

Input Serial Number: Enter the number on the text box showing on Picture2 and click on a button, you can select all the elements from the beginning of the subsequent number

Mixed Selection：After use the way of Input Serial Number, you can use the way of Selection with Mouse to increase or decrease elements

2. Trapping

After selection, you can click on *trapping*

1 —— ⊕ Start No.

2 —— Remount
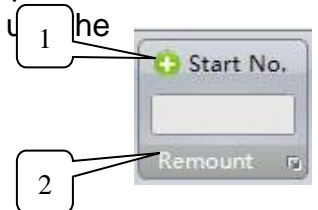
MT-602L operation (not connect with computer)

Production (Pick and Place)

1   Turn on the power

(1)Press ⬆⬇ to   Offline operation ，press **OK**，select placement file

(2)press ⬆⬇，select file，press **OK**，press **X/Z**，check if nozzle is in the center of reference point，

if not，press ⬆⬇ adjust nozzle in the center，press **OK**，start mounting。

(3)When mounting, press ⏸ to stop mounting，press ▶ continue mounting，press ↩ return home。

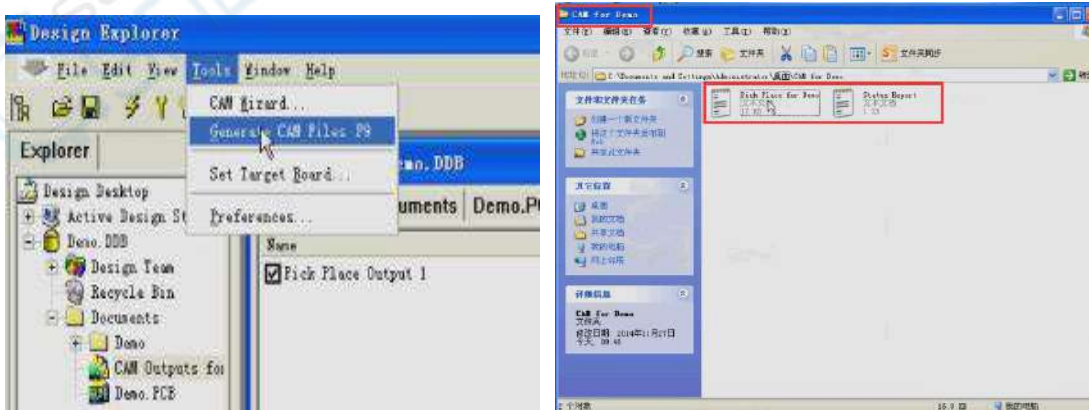## Create Pick & Place file (Protel 99SE for example)

1. Open the PCB file in Protel 99SE.

2. Click File-CAM manager-Next-choose "Pick Place", then click Next-Next-choose CSV or Text, then choose Next-Choose "Metric", and then click Next-Finish.
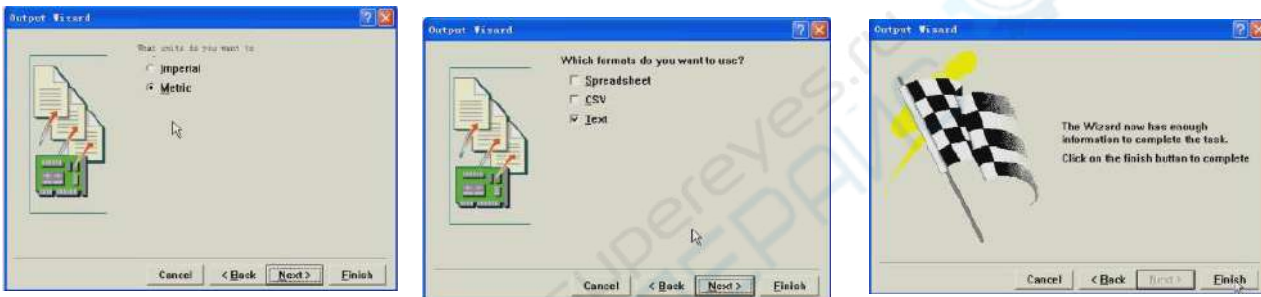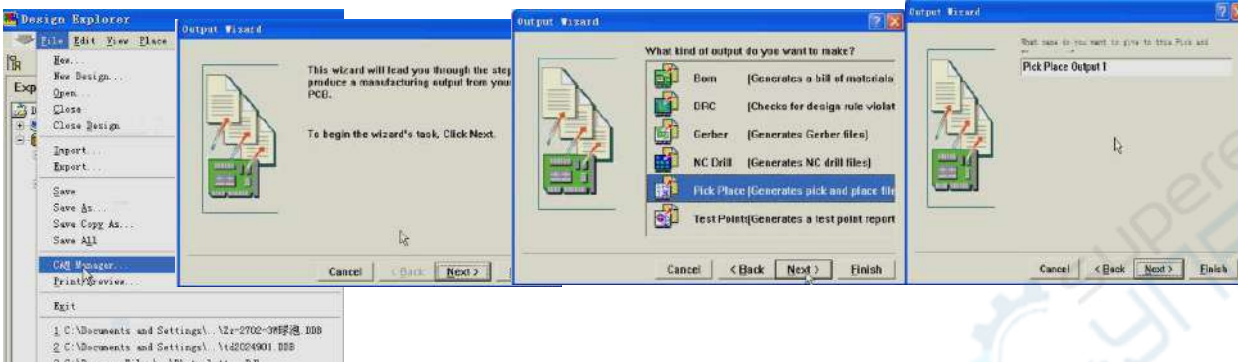
3. Click Tools-Preferences-choose output path, then click OK.
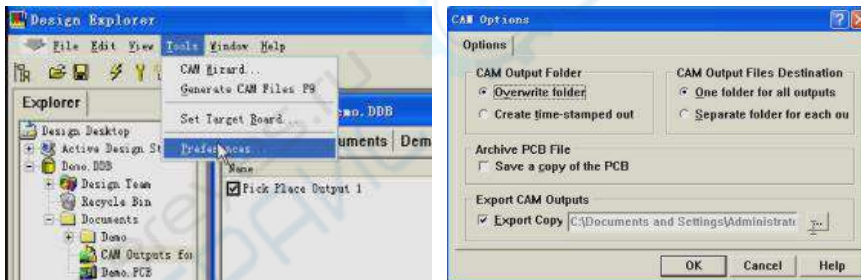
4. Click Tools-Generate CAM Files, then it will generate a folder named CAM for **
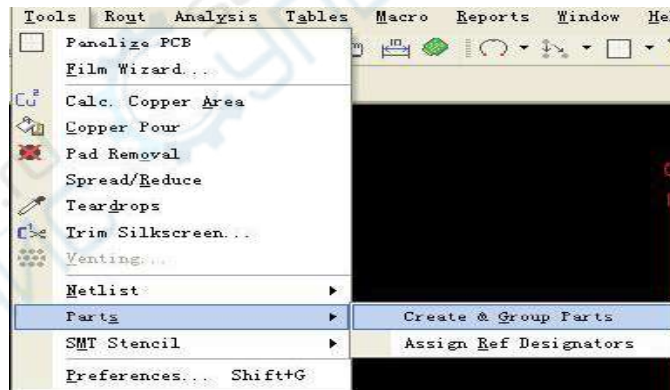
Using DXP output Gerber file

1   Open PCB file . GTS

2   Click menu bar（Tools）-choose Preferences。

3   Units choose Metric，OK .

4   Click menu bar Tools-Parts-Creat&Group Parts.

5   Click all welding plate include the components,click the right mouse button,show Assign/Group Parts. Input component model at Description text box,input component angle at Rotation(Deg) text box. Type choose SMT, OK. Choose the other components with the same method.
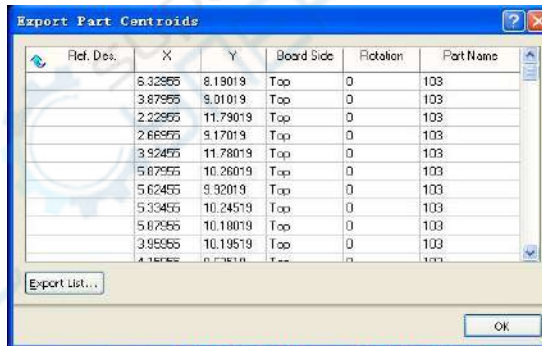
6   When all conponent edit over,click the right of mouse quit editing state.

。
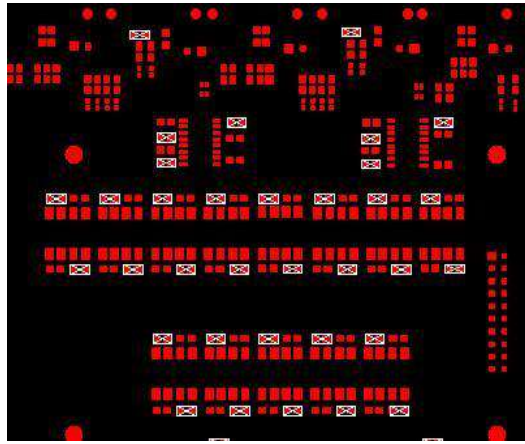
7   Click menu bar Tables-Parts，show Export Part Controide .

8   Click Export List，show Write Centroid Parts window， choose the path of output，click OK. Output . pcf file format.

9   Open the system of MT-602L,click "menu"-"lead",click " open file",choose . pcf file.   Click "open" "transform preview" "lead" creating . PH file.

Import P&P file to convert for mounting machine

1. File the software of mounting machine, click main menu-import.   You will see a pop-up dialog.

2. Click Open File , choose P&P file to open.

3. choose output software model O DXP ● Allegro ,choose DXP generally.

4. Click Overview .

5. For polarized components, 360° replace with 0°.
   For unpolarized components, 180°replace with 0°,270°replace with90°, 360°replace with 0°

6. Select the layer O TOP ● BOT ☐ Flip, click Import .   Components will be showed in the plot area.

7. Click main menu-save

Maintenance

SMT machine maintenance and lubrication chart
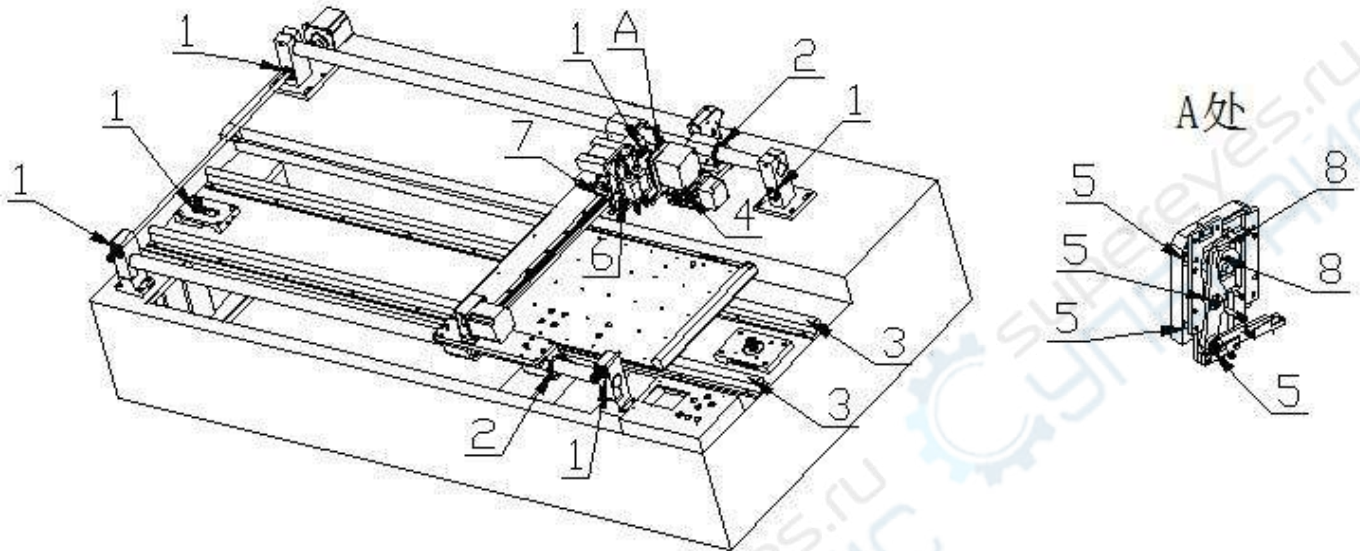
organization	608 bearing	LM25 line bearing	SBR16 slider	LM8 line bearing	619-3 bearing	9mm line slider	15mm line slider	
position	1	2	3	4	5	6	7	8
number	12	4	4	2	9	2	1	2
lubricant	lubricating oil							lubricating grease